

SECONDARY CONSTANTS OF LOADED CABLE
24-GAUGE DSM, FSM
B88 LOADING
At 68° F.*

Freq. Hertz	Propagation Constant per Mile			Mid-Section Impedance			
	Attenuation		Phase Shift β Radians	R Ohms	X Ohms (Neg.)	Z Ohms	Angle Degrees (Neg.)
	α Nepers	dB					
1	.00946	.082	.00811	17646	15021	23174	40.4
50	.05698	.495	.06722	2544	2140	3325	40.1
100	.07417	.644	.1033	1953	1395	2400	35.6
200	.09018	.783	.1699	1607	849	1817	27.9
300	.09707	.843	.2369	1495	609	1614	22.2
500	.1024	.890	.3748	1423	386	1474	15.2
800	.1049	.911	.5877	1403	248	1424	10.0
1000	.1056	.917	.7321	1405	200	1420	8.1
1200	.1061	.921	.8783	1415	168	1424	6.8
1400	.1063	.924	1.0264	1428	145	1436	5.8
1600	.1066	.926	1.1765	1446	128	1452	5.1
1800	.1068	.927	1.3289	1468	115	1473	4.5
2000	.1070	.929	1.4841	1494	105	1498	4.0
2200	.1072	.931	1.6424	1526	98	1529	3.7
2400	.1075	.933	1.8044	1563	92	1565	3.4
2500	.1076	.935	1.8869	1584	90	1586	3.2
2600	.1078	.936	1.9707	1607	88	1609	3.1
2700	.1080	.938	2.0557	1631	86	1634	3.0
2750	.1081	.939	2.0987	1644	85	1647	3.0
2800	.1083	.940	2.1420	1658	85	1660	2.9
3000	.1089	.946	2.3194	1720	84	1722	2.8
3200	.1098	.954	2.5039	1795	84	1797	2.7
3500	.1119	.972	2.7975	1939	90	1941	2.6
4000	.1197	1.039	3.3537	2340	123	2343	3.0
4500	.1471	1.278	4.0766	3356	309	3370	5.3
4800	.2368	2.057	4.7475	5666	1637	5897	16.1

* Temperature Variation per Degree F.

Hz	dB	Rad.	R	X
300	.0017	.00012	.286	-1.040
1000	.0021	.00018	-.093	-.426
3000	.0018	.00054	-.002	-.202

Notes: Nominal cutoff frequency = 4900 Hz.
Phase delay = 116.52×10^{-6} seconds/mile at 1000 Hz.
Velocity of propagation = 8.58×10^3 miles/second at 1000 Hz.

END - SECTION IMPEDANCE

Frequency (Hz) End Section	300		1000		2000		2500	
	R	X	R	X	R	X	R	X
0 (Full Coil)	1494	-524	1352	+ 86	1252	+469	1180	+ 632
.1	1495	-541	1372	+ 31	1335	+382	1306	+ 545
.2	1496	-558	1388	- 25	1404	+277	1421	+ 423
.3	1496	-575	1399	- 83	1457	+157	1513	+ 272
.4	1496	-592	1405	-141	1488	+ 28	1570	+ 96
.5 (Mid-Section)	1495	-609	1405	-200	1494	-105	1584	- 90
.6	1494	-626	1401	-257	1479	-235	1556	- 271
.7	1492	-642	1393	-313	1442	-357	1490	- 435
.8	1491	-658	1380	-367	1387	-466	1396	- 571
.9	1488	-674	1363	-418	1319	-559	1286	- 675
1.0 (Full Section)	1485	-690	1343	-467	1243	-635	1170	- 748

Frequency (Hz) End Section	2750		3000		3500		4000	
	R	X	R	X	R	X	R	X
0 (Full Coil)	1136	+711	1086	+789	964	+945	800	+1102
.1	1287	+629	1260	+717	1190	+916	1069	+1153
.2	1430	+505	1435	+594	1444	+814	1425	+1126
.3	1549	+337	1588	+412	1696	+610	1848	+ 936
.4	1626	+134	1690	+179	1882	+295	2222	+ 501
.5 (Mid-Section)	1644	- 85	1720	- 84	1939	- 90	2340	- 123
.6	1607	-300	1670	-338	1843	-458	2125	- 705
.7	1520	-488	1555	-552	1637	-736	1726	-1052
.8	1399	-636	1402	-711	1390	-902	1331	-1175
.9	1263	-742	1236	-813	1154	-975	1017	-1170
1.0 (Full Section)	1126	-807	1076	-867	953	-988	788	-1108